GALLATIN COUNTY

MEMORANDUM

TO: Interested Parties

FROM: Sean O'Callaghan, CFM, Senior Planner / Floodplain Administrator

SUBJECT: Floodplain-Related Amendments to Subdivision Regulations

MEETING DATE: April 14, 2010

As a result of policy changes with Montana DNRC, floodplain-related amendments have been drafted to sections 6 and 10 of the Gallatin County Subdivision Regulations. The proposed amendments are summarized as follows:

1. The Subdivision Regulations (Section 10.F) currently allow subdividers to request a waiver (via Montana Department of Natural Resources and Conservation) from the requirement to perform a flood study and flood hazard evaluation as part of the subdivision review process. DNRC has informed the County that they will no longer comment on waiver requests. The proposed amendments to the Subdivision Regulations establish a new waiver process, wherein a waiver is considered by the Commission prior to submittal of the preliminary plat application.

2. Section 10.G of the Subdivision Regulations describes subdivision design standards related to floodplains. All of the other subdivision design standards are included in sections 6 & 7 of Subdivision Regulations. Furthermore, Section 13 of the Subdivision Regulations states variances can only be obtained from the design standards contained in sections 6 & 7 of the Subdivision Regulations. The proposed amendments move the floodplain-related design standards from Section 10.G to Section 6 of the Subdivision Regulations and modify these standards to focus on mitigation rather than prohibition.

3. The County Attorney's Office suggested numerous language changes to Section 10, not related to the above two items. For the most part, these changes were suggested to clarify the existing processes and intent of the Regulations.

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Section 6.A - General Standards

- shall consider the site-specific conditions and any information entered into the record regarding the water conveyance facility;
- may impose conditions of preliminary plat approval as necessary to adequately mitigate adverse impacts on the subject water conveyance facility; and
- may require the width of the water conveyance facility non-interference setback to be greater than or less than the default width if site-specific conditions so warrant.

d. Any mitigation of water conveyance facilities required as a condition of preliminary plat approval shall be agreed to in writing by the subdivider prior to issuance of final plat approval. Such written agreement shall be filed with the Clerk and Recorder when the final plat is recorded and shall include language to assure the mitigation requirements are binding upon all successors in interest and remain in effect until such time that the water conveyance facility is abandoned in accordance with the requirements of Montana Law or alternative requirements are agreed to in writing by all applicable parties.

e. Water conveyance facility non-interference setbacks do not eliminate any secondary easement for maintenance and repair of the water conveyance facility as described by Section 70-17-112, MCA. Subdividers shall consider the specific terms and requirements of any such secondary easement(s) when designing a subdivision to ensure a buildable location on each developable lot.

f. Before any maintenance, improvements, or modifications are performed on any water conveyance facility, written permission must be obtained from the water users and/or water conveyance facility's authorized representatives.

7. Subdivision of Land within the 100-year Floodplain. Where the 100-year Floodplain has been delineated according to the requirements set forth in Section 10 of these Regulations, the following standards shall apply to any proposed Subdivision:

a. Land located within the 100-year Floodplain may be used for the following purposes:

i. Open space.
ii. Wildlife habitat.
iii. Parkland.
iv. Recreation.

b. Any proposed lot that includes land within the 100-year Floodplain must contain a designated building site outside of the 100-year Floodplain. All new development activity (including, but not limited to: erection or placement of Structures, excavation, grading, placement of fill, etc.) on the lot shall be restricted to the land outside the 100-year Floodplain.

c. Subdivider shall demonstrate that safe access to the designated building site must be possible during the 100-year Flood.

d. Subdivisions should be designed to avoid placing subdivision-related infrastructure (roads, bridges, utilities, etc.) within the boundaries of the 100-year Floodplain. Infrastructure that must be located in the 100-year Floodplain shall not adversely affect public health and safety or increase Flood hazards.

i. Bridges within a Subdivision shall be designed so the lowest horizontal chord of the bridge is at least two-feet above the Base Flood elevation.

B. Lots. See FIGURE 1.

1. Dimensions and Orientation: Lot size, width, shape, and orientation shall be appropriate for the location and contemplated use of the subdivision. Lot designs with irregular shapes, narrow necks, points and flag shapes shall be permitted only when the subdivider can demonstrate that the proposed lot designs are necessary due to topography or other physical constraints. Each lot shall contain a satisfactory building site and shall conform to zoning codes and comprehensive plans where officially adopted, and to the regulations of MDEQ. Slopes in excess of 25 percent (25%) shall be presumed unsuitable for building sites unless otherwise proved by the subdivider.

2. Division by Rights-of-Way: No single lot shall be divided by a dedicated right-of-way or easement, which would reduce the buildable area to a size less than required by these and other adopted regulations.

3. Double Frontage: Double frontage lots shall be avoided except where essential:

a. To provide separation of residential development from arterial roads.

b. To provide access to development adjacent to limited access roads.

SECTION 10: FLOOD HAZARD EVALUATION

A. General. Land subject to being flooded by a Flood of 100-Year Frequency as defined by Title 76, Chapter 5, MCA, or land ~~deemed to be~~ subject to flooding ~~by the Commission~~ pursuant to these Regulations, shall not be subdivided for building or residential purposes, or other uses that may increase or aggravate Flood hazards to life, health or welfare, or that may be prohibited by state or local Floodplain or Floodway regulations. Land ~~deemed to be~~ subject to flooding pursuant to these Regulations~~by the Commission~~ may include (but is not limited to) land subject to 100-year flooding, 500-year flooding, shallow flooding, groundwater rise, historically flooded lands, and lands located in proximity to a Watercourse.

B. Intent. The intent of a flood hazard evaluation is to assess ~~all~~ possible flooding hazards to a proposed Subdivision and resulting therefrom. Part of this evaluation must therefore addresse the uncertainty of predicted conditions during significant meteorlogic, geologic and hydrologic events, and the evaluation draws upon known and observed Flood behaviors and dynamics for context. The ~~regulatory~~ flood maps and associated documentation included within the County-recognized flood studies ~~recognized by Gallatin County~~ may contain some of this information but do not address the full range of hazards and flooding conditions necessary for a flood hazard evaluation.

C. Procedure.

1. Flood Hazard Evaluation Required: If any portion of a proposed subdivision is within a flood zone as designated by a FEMA Flood Insurance Rate Map, a FEMA Floodway Map, or a County-~~approved~~ recognized flood study, a flood hazard evaluation (as outlined in Subsection D below) shall be submitted. County-recognized flood studies include flood studies adopted by Federal or State government agencies (USGS, NRCS, Army Corps of Engineers, FEMA, Montana DNRC), those flood studies referenced by the Gallatin County Floodplain Regulations, or other flood studies meeting the requirements of Appendix G that have been reviewed and approved by the Gallatin County Floodplain Administrator. Where multiple flood studies cover a project area, the Subdivider shall consult the Floodplain Administrator to identify the applicable flood study to reference.

2. Flood Study Required: If any ~~portion of~~ infrastructure (roads, bridges, utilities, etc.) or developable portion of a lot within a proposed ~~subdivision~~ Subdivision ~~is~~ are within two thousand (2,000) horizontal feet and less than twenty (20) vertical feet above the Ordinary High Water Mark of a Watercourse draining an area of five (5) square miles or more, and no ~~official floodplain or floodway delineation (study) of the stream have been made~~County-recognized flood study of the Watercourse exists;~~,~~ or when a Base Flood elevation is contested or not provided by a County-recognized

flood study;~~,~~ a flood study (as outlined in Appendix G) consisting of a full engineering analysis to determine the base flood elevation and a flood hazard evaluation (outlined in Subsection D below) shall be required. A licensed professional Engineer experienced in this field of work must submit a stamped letter attesting to the accuracy and integrity of the flood study.

3. Submission of Report: Three copies of the required flood hazard evaluation and/or flood study and the ~~model's~~ digital files from any applicable hydraulic model shall be submitted to the Floodplain Administrator ~~at the time of~~for review and comment at least 30-days prior to submittal of the preliminary plat application to the Planning Department. This information may be forwarded by the Floodplain Administrator or County Commission ~~submitted, upon the request of the Commission,~~ to the Floodplain Management Section, Water Resources Division, Department of Natural Resources and Conservation (DNRC) for review and concurrence. ~~If submitting a Flood Hazard Evaluation or flood study, the applicant will be required to pay for independent peer review by a licensed professional engineer or other qualified professional as approved by the County.~~ Applicant may be required to pay for independent peer review of the flood hazard evaluation and/or flood study if the County Floodplain Administrator or County Commission deems this necessary for reasons of technical complexity or if the applicant disputes County's findings. The flood study/flood hazard evaluation review fees and independent peer review fees shall be assessed at the current rate established in the Gallatin County ~~floodplain~~ Planning Department fee schedule.

D. Flood Hazard Evaluation. A flood hazard evaluation is a professional assessment of ~~all~~ possible flooding hazards and a report of the risks associated with this potential flooding in the proposed subdivision or resulting therefrom. In addition to industry standard, one-dimensional, steady state water surface elevation modeling provided by the applicable County-recognized flood study (as outlined in ~~Appendix G~~Section 10.C.1), a flood hazard evaluation includes:

1. A hydrologic analysis detailing: the derivation of the magnitude and frequency of the design flows utilized in the risk analysis (a discussion of the statistical and applicant's confidence in these estimates); the implications of simultaneous Flood events on the design discharge, and verification that these estimates reflect the most recent recorded stream gage data and/or industry standard estimation methodologies.

2. An analysis and commentary regarding the accuracy of the existing regulatory maps to predict 100-year and 500-year Floodplain boundaries with existing conditions upstream, on site and downstream of the project area or a new flood study proposed as the new regulatory map for the project area.

3. A discussion of overbank flow path uncertainty related to: rivers and stream channels that are topographically higher than surrounding Floodplains, such as is common on the East and West Gallatin Rivers; shallow ~~flooding~~ Flood channels; alluvial fan flooding; debris jams; ice jams and/or diversions and ditches.

4. A discussion of possible or predicted channel stability during Flood events, including the possibility of channel avulsion and/or thalweg migration that could affect the ~~flooding~~ Flood dynamics in the project area.

5. A discussion of the risk of landslides and/or debris flows occurring and affecting Flood behavior in project area drainages.

6. An analysis of the stability and structural integrity of permitted and unpermitted floodplain fill in the vicinity of the project that contacts the regulatory 100-year Floodplain, including rip rap, berms, levees, and other fill.

7. Identification and quantification of predicted overland flow and potential overland flow paths above and below the property under consideration.

8. A discussion of the project area's propensity to experience Flood due to groundwater rise ~~flooding~~.

9. Identification and quantification of predicted flooding from runoff over saturated and/or frozen ground.

10. A complete discussion of the stormwater runoff management practices and design criteria utilized to safely pass stormwater through the project without negatively affecting up- and downstream Flood dynamics. This may include an analysis of runoff after projected buildout scenarios.

11. A discussion of risks associated with failures in upstream, downstream or on-site road, culvert, bridge and stormwater management infrastructure.

12. A statement attesting that all proposed sanitary sewer infrastructure meets 100-year Flood design standards and/or will not otherwise contribute to water pollution during periods of flooding or high groundwater.

13. A discussion of ~~irrigation ditches~~ Water Conveyance Facilities in the area and how they would affect the project should they fail, overtop or route surface runoff.

14. An identification of depressional areas (areas below the Base Flood elevation or design Flood elevation but unconnected to a separate and discrete flow path).

15. A discussion of risks associated with dam failures.

16. A discussion of potential changes in runoff or watershed hydrology that could affect the project.

17. A discussion of impacts to the Floodplain associated with development of the project (i.e. boring utilities under stream channel, construction of stream crossings, etc.) and proposed mitigation of such impacts.

18. A discussion regarding compliance with the requirements of Section 6.A.7.

~~17~~19. A discussion of any Flood hazard that the Floodplain Administrator or County Commission feels is germane to the project.

E. Flood Hazard Evaluation Techniques. Acceptable methodologies for developing a flood hazard evaluation include industry standard methods and those capable of satisfying professional peer review. These may include engineering, hydraulic, hydrologic, fluvial geomorphic, geotechnical, and risk analyses in addition to professionally qualified opinions and observations.

F. Waiver of Requirement. An applicant may apply for a waiver from the requirement to perform a flood study and/or flood hazard evaluation following the process described in Section 10.F.1 of these Regulations. The Commission may waive the requirement to perform a flood study and/or flood hazard evaluation after considering the criteria described in Section 10.F.2 of these Regulations. ~~The Commission may waive this requirement where the subdivider contacts the Water Resources Division, DNRC, and that agency states in writing that data indicates that the proposed subdivision is not in the flood hazard area as defined in this Section. In considering a waiver, the Commission shall consult with the Gallatin County Floodplain Administrator.~~

1. Process for Requesting Waiver:

   a. Waivers shall be requested by the Subdivider in writing, submitted to the Planning Department, processed by the Floodplain Administrator, and decided upon by the Commission prior to submittal of the preliminary plat application to the Planning Department;

   b. The waiver request shall include substantial documentation sufficient to demonstrate that the proposed Subdivision is safe from flood hazards; and shall address the criteria described below in Section 10.F.2. Such documentation may include, but is not limited to, ground elevations, hydrologic information for the subject

Watercourse, historical flood information, descriptions or mapping of local drainage patterns, other similar information;

c. The Floodplain Administrator shall review the waiver request and prepare a staff report for the County Commission;

d. The County Commission shall hold a public hearing on the waiver request within 30 working days of the Floodplain Administrator's receipt of the waiver request.

e. In reaching a decision on the waiver request, the Commission shall consider the information provided by the applicant, staff report, public testimony, and other information relevant to the request; and

f. Within 10 working days of their decision on the waiver request, the Commission shall forward a written record of their decision.

2. Criteria for Waiver: In reaching a decision on whether or not to grant a waiver, the Commission shall consider the following criteria:

a. Whether the applicant provided substantial documentation to show that the proposed subdivision is safe from Flood hazards;

b. Whether the applicant is proposing adequate mitigation to assure that Food hazards are not increased as a result of the proposed subdivision;

c. If the property is already developed, whether sufficient land-use controls exist to assure that any redevelopment of the property will be safe from Flood hazards

~~**G. Subdivision of Land within a 100-year Delineated Floodplain.** Where the 100-year floodplain has been delineated and mapped in a County-approved study, the following standards shall apply to all proposed subdivisions:~~

~~1. No subdivision roads, bridges, utilities, or 100 % of a lot shall be located within the boundaries of the 100-year floodplain.~~

~~2. Land located within the 100-year floodplain boundary may be used for the following purposes:~~

~~i. Open space.~~
~~ii. Wildlife habitat.~~
~~iii. Parkland.~~
~~iv. Recreation.~~

~~H~~G. **Plat Map requirements.** The Preliminary and Final Plats of all n~~N~~ew ~~developments~~ Subdivisions within any land located in a 100-year ~~flood hazard areas designated by the regulatory study (FEMA or County-approved study)~~Floodplain shall ~~field survey~~show the Base Flood elevations and ~~show~~ the limits of the 100-year Floodplain based on where the Base Flood elevations intersect surveyed ground elevations.~~on the plat map.~~ The Floodplain Administrator may require additional ~~Base~~ Flood data and Flood hazard notes ~~shall~~ to be shown on the final plats or other applicable development document (final site plan, covenants, etc.). Such information include~~sing~~, but is not limited to, the elevation of the existing ground, flood water depth, lowest permissible floor elevations, and the boundary of the ~~base flood~~100-year Floodplain and Floodway through the subdivision.

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